



Recent developments and future plans of 700 MHz Band

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Importance of the 700MHz band for IMT

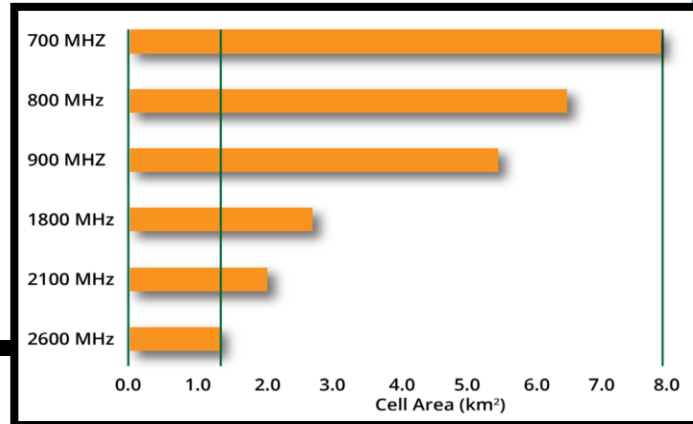
“Lower frequencies provide wider coverage”

In rural areas :

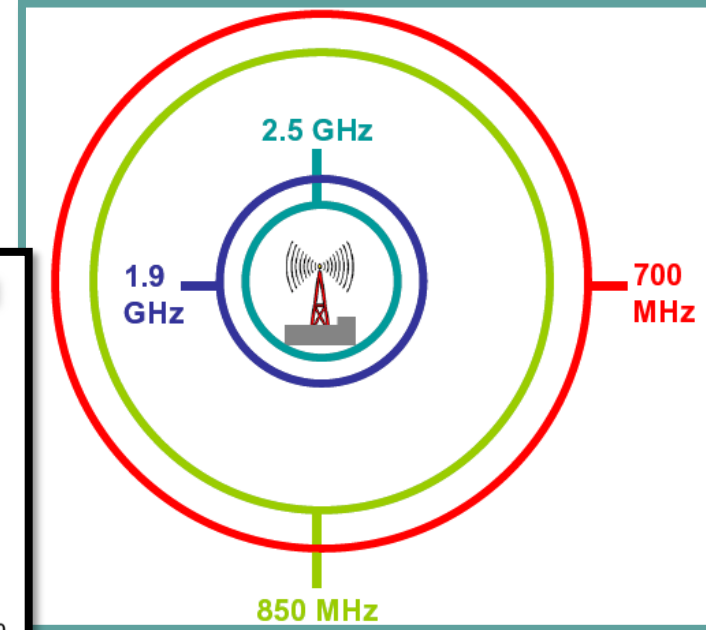
- lower-frequency bands covers wider areas with fewer base stations than other “capacity” mobile broadband spectrum which relies on higher frequencies.
- lower deployment costs and allows broader, more affordable coverage.

In urban areas :

- it improves indoor coverage, frequencies can more easily penetrate buildings.



Relative Cell sizes



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Latest developments on the 700MHz band for IMT

WRC-15 : Global harmonisation of the 700 MHz band
694 – 790 MHz in Region 1: allocation to MS and identification for IMT.

“The WRC-15 decision represents a landmark in the development of broadband mobile on a worldwide scale, regardless of location, network or terminal used,” said ITU Secretary-General Houlin Zhao.

“The global harmonization of the 694-790 MHz frequency band that has been decided by WRC-15 paves the way for manufacturers and mobile operators to offer mobile broadband at an affordable price in currently underserved areas,” said François Rancy, Director of the ITU Radiocommunication Bureau.

Digital Dividend Phase 1 :

800 MHz band for use in ITU Region 1

700 MHz band (698–806 MHz) —APT 700 — for use in ITU Regions 2 & 3.

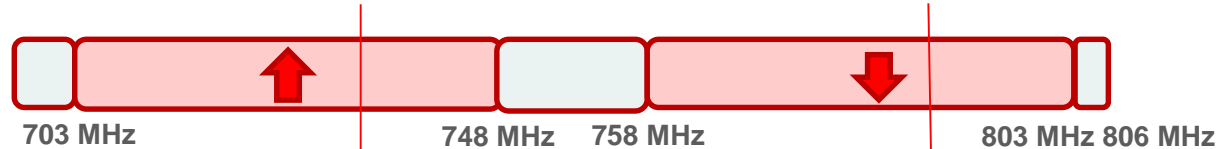
Digital Dividend Phase 2 :

700 MHz (694-790 MHz) for use in ITU Region 1

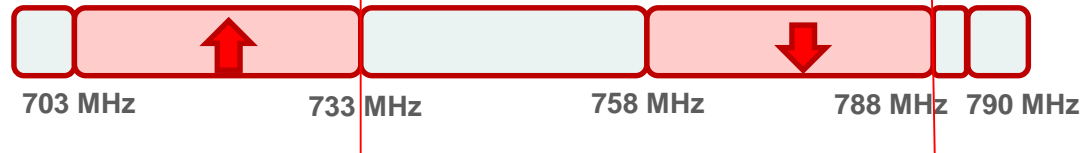
Latest developments on the 700MHz band for IMT

700 MHz: a global band Connecting the unconnected: 2nd Digital Dividend

Regions 2 & 3



Region 1



- Region 1 plan offers 2 x 30 MHz below 800 MHz plan
- Co-existing Region 2/3 and Region 1 plans create global marketplace
- Multiple options for duplex gap



4G networks launched worldwide in the 700 MHz band

45 countries assigned/launched 4G in the 700MHz band

Mainly in Americas and APAC

Spectrum assigned in Egypt and Saudi Arabia in MENA

EU countries have until 2020 to release the 700MHz band



Brussels, 14 December 2016, The European Parliament, the Council and the Commission have agreed on how to coordinate the use of the 700 MHz band to bring mobile internet services to all Europeans and new applications across borders, thus facilitating the introduction of 5G as of 2020.

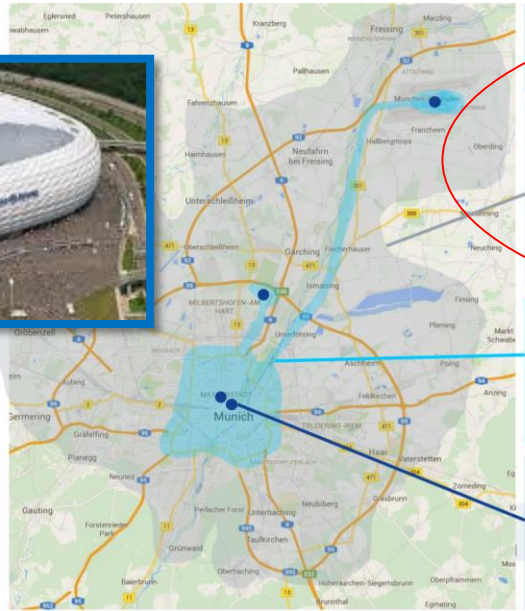
The 700 MHz band should be assigned to mobile operators and made available for **wireless broadband** use by 30 June 2020 at the latest in all EU Member states. Duly justified exceptions are possible until 30 June 2022.



700MHz band in 5G for European Football Championship 2020

European Commission targets 5G services in at least 1 city of each of the 28 member states in 2020, with a focus on demonstrations in the cities hosting the Euro 2020 football tournament

Unlocking new spectrum assets in European Football Championship 2020 cities
Leveraging 5G pioneer bands 700 MHz, 3.4-3.8 GHz, 26 GHz



Vision on commercial 5G deployments in 2020, e.g. in Munich

- 700 MHz layer with 1 ms latency
- large area coverage with outdoor-to-indoor penetration
 - Supports massive machine type communication (mMTC)
 - Supports ultra reliable – low latency communication (URLLC)
 - Moderate invest on existing 800/900 MHz grids

- 3.4-3.8 GHz layer with ~1 Gbps and 1 ms latency
- Dense urban coverage + airport + stadium + public transport
 - Supports initial enhanced Mobile Broadband (eMBB)
 - Moderate invest on existing 1800/2100/2600 MHz grids

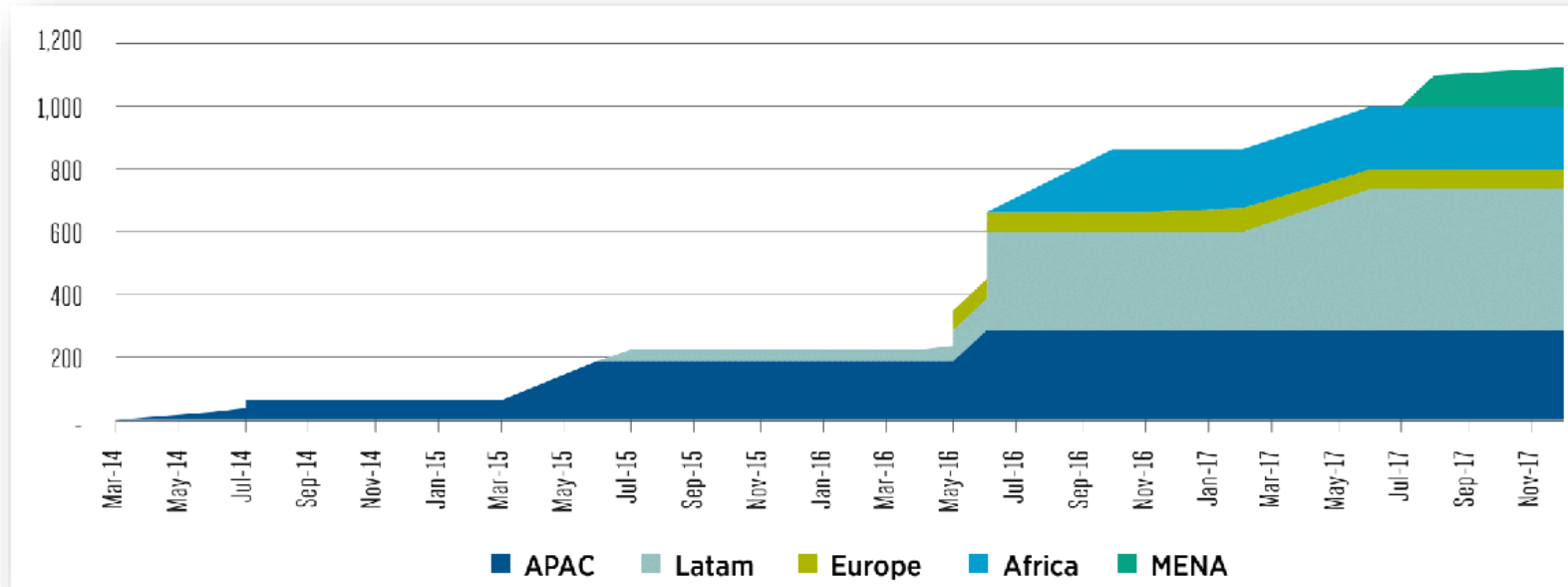
- 26 GHz layer with ~10 Gbps and 1 ms latency
- Coverage in selected hot spots (airport, stadium, press center)
 - Supports full enhanced Mobile Broadband (eMBB)
 - Moderate invest in selected areas

Source : Nokia



What addressable market for the 700MHz band ?

700 MHz band addressable market size (pop in millions)





4G networks launched/planned worldwide in the 700MHz band

106 countries launched or planning to launch 4G/5G in the 700MHz band

45 launched

61 planning to launch





Status in MENA region

6 countries launched or planning to launch Mobile Services in the 700MHz band

2 assigned spectrum

4 planning to launch





GSMA recommendations for MENA region

A forward-looking regulatory environment is essential

- **Reform and modernisation of regulation** in key areas, policymakers and the regulator can play a major role in expanding access to and adoption of mobile broadband. *How IoT will be regulated ?*
- A **predictable roadmap** should be created for future assignments of spectrum in 700 MHz band, in consultation with industry players to ensure fair and **reasonable policies and regulations**.
- Support **effective pricing** of spectrum.
- **Reforming mobile sector-specific taxation** towards a more balanced and efficient structure can increase affordability of mobile products and services by lowering the tax burden on consumers and mobile operators.



700MHz band is essential for LTE in MENA region

The Digital Dividend should be allocated for mobile use in alignment with regionally harmonised band plans as soon as possible

- Licensing 700MHz spectrum is **key for governments** in MENA to give their citizens access to affordable, high-quality MBB services at a lower Cost.
- 700MHz band is **mature**, started in Americas, already decided for Europe and coming to MENA.
- **Spectrum in 700MHz should be assigned to Mobile with no delay and technologically neutral**
- **Global harmonisation** of the bands which was possible with WRC-15, will accelerate the development of the ecosystem, which depends heavily on the demand that exists on the market and is a function of the created economies of scale
 - **drive down the cost** of handsets for consumers
 - **mitigate interference** along national borders
- **Excessive fees** from licensing 700MHz spectrum can lead to spectrum remaining unsold and risks impacting network investment and deployment. Ultimately, It will limit the socio-economic benefits that affordable MBB access can deliver.

THE GSMA

WRC SERIES

